

CLAIMS

1. An integrated optoelectronic module array, comprising:

a component structure including a plurality of optoelectronic sub-modules, the component structure being integrally formed such that each optoelectronic sub-module shares at least one wall portion with an adjacent optoelectronic sub-module;

and

a latching mechanism that enables the component structure to be selectively secured at least partially within an outer cage.

2. An integrated optoelectronic module array as defined in claim 1, wherein the outer cage is affixed to a host board.

3. An integrated optoelectronic module array as defined in claim 2, wherein the host board is contained within an optical device, the optical device being selected from the group consisting of optical switches and optical routers.

4. An integrated optoelectronic module array as defined in claim 2, wherein an optical interface portion of the component structure extends from a first open end of the outer cage, and wherein a plurality of printed circuit board card portions extends from a second open end of the outer cage.

5. An integrated optoelectronic module array as defined in claim 4, wherein the optical interface portion includes at least one optical port for each of the optoelectronic sub-modules.

6. An integrated optoelectronic module array as defined in claim 4, wherein each of the plurality of printed circuit board card portions is received by a respective one of a plurality of connector receptacles connected to the host board.

7. An integrated optoelectronic module array as defined in claim 1, wherein each of the optoelectronic sub-modules is an optical transceiver module.

8. An integrated optoelectronic module array as defined in claim 1, wherein the outer cage provides electromagnetic interference shielding for the optoelectronic sub-modules.

9. An integrated optoelectronic module array as defined in claim 1, further comprising a housing that contains at least a portion of the optoelectronic modules.

10. An integrated optoelectronic module array as defined in claim 1, wherein the component structure is configured to minimize spacing between the optoelectronic sub-modules.

11. An optical device, comprising:

a first host board having an outer cage affixed thereto;

an integrated optical transceiver array, including:

a component structure at least partially contained within a housing, the component structure including a plurality of optical transceiver sub-modules, the component structure being integrally formed such that each optical transceiver sub-module shares at least one wall portion with an adjacent optical transceiver sub-module; and

a latching mechanism that enables the component structure to be selectively secured within the outer cage.

12. An optical device as defined in claim 11, wherein four optical transceiver sub-modules are included in the component structure.

13. An optical device as defined in claim 11, wherein at least one optical fiber connector is selectively connected with at least one of the optical transceiver sub-modules, and wherein a release sleeve is slidably attached to the at least one optical fiber connector.

14. An optical device as defined in claim 11, wherein the latching mechanism is at least partially attached to the component structure and includes:

a rotatable bail;

a pivot block having a lock pin, the pivot block being pivotally attached to the rotatable bail, wherein the lock pin engages a portion of the outer cage when the bail and the pivot block are positioned in a specified configuration to selectively secure the integrated optical transceiver array.

15. An optical device as defined in claim 11, wherein the outer cage is positioned between the first host board and a second host board.

16. An optical device as defined in claim 11, wherein the optical device includes a plurality of integrated optical transceiver arrays.

17. An optical device as defined in claim 16, wherein two integrated optical transceiver arrays are positioned on opposite surfaces of the first host board, wherein the latching mechanisms of the integrated optical transceiver array each engage the first host board.

18. An integrated optical transceiver module array, comprising:
- a housing;
 - a component structure at least partially contained within the housing, the component structure including an integrated plurality of optical transceiver sub-modules; and
 - a latching mechanism that selectively engages an outer cage, the outer cage receiving at least a portion of the integrated optical transceiver module array.

19. An integrated optical transceiver module array as defined in claim 18, wherein the outer cage is mounted to a host board of an optical device, and wherein the outer cage provides electromagnetic interference shielding for the plurality of optical transceiver sub-modules.

20. An integrated optical transceiver module array as defined in claim 19, wherein each optical transceiver sub-module includes dual optical ports.

21. An integrated optical transceiver module array as defined in claim 20, wherein the component structure includes at least one card-edge connector extending from a rear end of the outer cage, the card-edge connector electrically connecting with a connector receptacle on the host board.

22. An integrated optical transceiver module array as defined in claim 21, wherein the component structure includes four optical transceiver sub-modules.

23. An integrated optical transceiver module array as defined in claim 22, further comprising a plurality of optical fiber connectors that are each connected to the optical ports of respective optical transceiver sub-modules, wherein each optical fiber connector includes a release sleeve that is slidably engaged with the optical fiber connector.

24. An integrated optical transceiver module array as defined in claim 23, wherein each optical fiber connector is an LC duplex connector having a connector latch for disengaging the LC duplex connector from a respective one of the optical transceiver sub-modules.

25. An integrated optical transceiver module array as defined in claim 24, wherein each release sleeve is shaped to correspond to the exterior shape of the respective LC duplex connector.

26. An integrated optical transceiver module array system as defined in claim 25, wherein the release sleeve includes a body defining open first and second ends, wherein a portion of the body further defines a curved inner cam surface.

27. An integrated optical transceiver module array system as defined in claim 26, wherein the release sleeve is selectively slidable between a first position and a second position, and wherein in the second position the curved inner cam surface engages the connector latch of the LC duplex connector to enable it to disengage from the a respective one of the optical transceiver sub-modules.

28. An integrated optical transceiver module array system as defined in claim 27,
wherein the release sleeve is composed of a thermoplastic material.

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